

# “Build a Bundle”



**Project Summary:** Our NAYGN chapter has created “build a bundle”. This is a 3D printed plastic miniature fuel assembly that the kids are able to build themselves. We bought a pellet press and the kids are able to press their own pellets (we found coffee creamer works very well) and then assemble the fuel rods. There is a lower and upper tie plate with a spacer to create an entire fuel assembly. We use food coloring to make different colored pellets to represent different U-235 enrichments. We have found that this is a very useful tool in teaching high school age children about nuclear power.

Our goal is to provide instructions and help to other NAYGN chapters across the nation so that they can create their own “build a bundle” to help with advocacy efforts.

**Budget:** We used a \$400 3D printer with about \$400 worth of material. This includes the plastic for the 3D printer, plastic tubes, springs, pellet press, coffee creamer and food coloring. If another NAYGN chapter wanted to create their own “build a bundle” it would cost them about \$400, if they already had access to a 3D printer. We plan to upload the 3D printer files, parts list, and instructions online for free.

**Timeline:** Our goal is to have a fully functional “build a bundle” with LED lighting included ready by January 2018. We should be able to upload the 3D printer files, instructions and parts list by February 2018.

**Scope of Work:** The majority of the work has already been completed. We still have to figure out the LED lighting and upload the files, instructions and parts list. We are also trying to figure out how to make the pellet pressing more efficient. Right now it takes the students about 1-2 minutes to press 1 pellet. We’d ultimately like to be able to press 2 or 3 pellets a minute.

**Benefit to NAYGN:** This will give access to all NAYGN chapters across the nation to a useful tool in their advocacy efforts.

**NAYGN Core responsibilities:** It would be nice to be able to upload the 3D printer files, parts list and instructions to the NAYGN website. This will make it easy for all of the NAYGN chapters to access.

**Project Lead Contact Information:**

Chad C. King  
Engineer, Thermal-Hydraulics Richland

**AREVA Inc.**

2101 Horn Rapids Road

Richland, WA 99354

Cell Phone: (206) 715-9085

e-mail: [Chad.King@areva.com](mailto:Chad.King@areva.com)